

This listing of claims will replace all prior versions, and
listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1 (currently amended): Device for needle-free injection of a medium into the tissue of a human or an animal, characterized by wherein a needle-free pre-injection device (1, 22, 24, 33, 46) for production of a high-pressure jet of a pre-injection medium for producing an injection channel by means of a high pressure and a small volume, and by a main injection device (17, 21, 23, 34, 47) for introduction of the medium to be injected, with a great volume and a low pressure in comparison with the volume and pressure of the pre-injection device (1, 22, 24, 33, 46).

Claim 2 (currently amended): Device as recited in claim 1, characterized in that wherein the pre-injection device (1, 22, 24) has a first chamber (4) for accommodating a pre-injection medium, and the main injection device (17, 21, 23) has a second chamber (19, 27) for accommodating a medium to be injected, that nozzle (2, 32) intended to be set onto the skin is connected with the chamber (4) of the pre-injection device (1, 22, 24) and

with the outlet of the main injection device (17, 21, 23) by way of a kick-back valve (5), and that a pressure-production device (14') that is connected with the chamber (4) of the pre-injection device (1, 22, 24) is configured to produce a high-pressure jet from the nozzle (2, 32) that penetrates the tissue, whereby the chamber (4) of the pre-injection device (1, 22, 24) has a volume sized exclusively for producing an injection channel in the tissue, and the chamber (19, 27) of the main injection device (17, 21, 23) has a volume intended for the medium to be injected.

Claim 3 (currently amended): Device as recited in claim 1 or 2, characterized in that wherein the chamber (19) of the main injection device (17) has a piston (18) that can be moved by hand.

Claim 4 (currently amended): Device for needle-free production of an injection channel in the tissue of a human or an animal, for introduction of a medium to be injected into the tissue, characterized in that wherein a pre-injection device (1, 22, 24) is provided ahead of a main injection device (17, 21, 23) that contains the medium to be injected, that a chamber (4) of the pre-injection device provided for accommodation of a pre-injection medium has a nozzle (2) intended to be set onto the

skin, and the pre-injection device has a pressure-production device (14') for producing a high-pressure jet of the pre-injection medium that exits from the nozzle (2), and that the chamber (4) has a volume sized exclusively for producing the injection channel.

Claim 5 (currently amended): Device as recited in claim 4, characterized in that wherein the pre-injection device (1, 22, 24) has a coupling device (9) for a connection with a main injection device (17, 21, 23) that contains the medium to be injected.

Claim 6 (currently amended): Device as recited in ~~at least one of the preceding claims, characterized in that claim 1,~~ wherein the pressure-producing device (14', 38, 51) of the pre-injection device (1, 33, 46) has a pressure plate (7) biased by a spring force, or a biased pressure piece (42, 55).

Claim 7 (currently amended): Device as recited in ~~at least one of the preceding claims, characterized in that claim 1,~~ wherein the main injection device (17) has a channel (8) connected with the nozzle (2) of the pre-injection device (1).

Claim 8 (currently amended): Device as recited in ~~at least~~
~~one of the preceding claims, characterized in that claim 1,~~
wherein a kick-back valve (5) is disposed within the channel (8).

Claim 9 (currently amended): Device as recited in ~~at least~~
~~one of the preceding claims, characterized in that claim 1,~~
wherein a trigger (11, 40, 57) of the pre-injection device (1)
holds a pressure plate (7) biased by a spring (14) or a pressure
piece (42, 55) in its base position.

Claim 10 (currently amended): Device as recited in ~~at least~~
~~one of the preceding claims, characterized in that claim 1,~~
wherein the trigger (11) is connected with the chamber (4) of the
pre-injection device (1) and is configured to release the
pressure plate (7) above a planned pressure.

Claim 11 (currently amended): Device as recited in ~~at least~~
~~one of the preceding claims, characterized in that claim 1,~~
wherein a membrane (12) is part of the piston (6), with which the
chamber (4) of the injection medium is connected, and this
membrane (12) activates the trigger (11) by way of a pusher (13).

Claim 12 (currently amended): Device as recited in ~~at least~~
~~one of the preceding claims, characterized in that claim 1,~~
wherein the channel (8) has a connection (3) with the chamber (4)
of the injection medium, and that the kick-back valve (5) is
disposed between the connection (3) and the coupling device (9).

Claim 13 (currently amended): Device as recited in ~~at least~~
~~one of the preceding claims, characterized in that claim 1,~~
wherein the chamber (8) has a piston (6) that rests against the
pressure plate (7) and can be displaced in length, and that the
channel (8) is guided through the piston (6) and the pressure
plate (7).

Claim 14 (currently amended): Device as recited in ~~at least~~
~~one of the preceding claims, characterized in that claim 1,~~
wherein the main injection device (17, 21, 23, 34, 47) and the
pre-injection device (1, 22, 24, 33, 46) have a common nozzle (2,
32, 36, 49).

Claim 15 (currently amended): Device as recited in ~~at least~~
~~one of the preceding claims, characterized in that claim 1,~~
wherein a trigger (11) of the pre-injection device (1, 22, 24)

can be indirectly activated by the pressure produced by the main injection device (17, 21, 23).

Claim 16 (currently amended): Device as recited in ~~at least one of the preceding claims, characterized in that~~ claim 1, wherein the pre-injection device (33, 46) and the main injection device (34, 47) have a common chamber (35, 48) for accommodating the medium to be injected, and a common pressure-production device (38, 51), and that the pressure-production device (38, 51) has means for reducing the size of a first, slight part of the chamber (35, 48) in a first step, by a small volume, at a great pressure, and, in a second step, by a great volume, at a low pressure.

Claim 17 (currently amended): Device as recited in ~~at least one of the preceding claims, characterized in that~~ claim 1, wherein the common pressure-production device (38) has a single spring (41) and damping means (43) for damping the movement of a piston (37) that delimits the common chamber (35).

Claim 18 (currently amended): Device as recited in ~~at least one of the preceding claims, characterized in that~~ claim 1, wherein the common pressure-production device (51) has two

springs (53, 54) having different spring stiffness values and springs (53, 54) having different spring stiffness values and spring paths, whereby a first spring element (53) for moving the piston (50) in the first step has a high spring stiffness and a short spring path, while a second spring (54) for moving the piston (50) has a low spring stiffness and a long spring path.

Claim 19 (currently amended): Device as recited in ~~at least one of the preceding claims, characterized in that~~ claim 1, wherein the pre-injection medium is a physiologically non-problematic liquid.

Claim 20 (currently amended): Device as recited in ~~at least one of the preceding claims, characterized in that~~ claim 1, wherein the pre-injection medium is the medium to be injected or anesthetic.

Claim 21 (currently amended): Method for needle-free injection of a medium into the tissue of a human or an animal, characterized in that wherein first, a high-pressure jet of a pre-injection medium is produced, and an injection channel is produced in the tissue by means of the high pressure jet, and subsequently, the medium to be injected is introduced into the tissue through the injection channel.

Claim 22 (currently amended): Method as recited in claim 21, ~~characterized in that~~ wherein the introduction of the medium to be injected directly follows the production of the injection channel, and that a minimum pressure is applied during the introduction of the medium to be injected, to maintain the injection channel.

Claim 23 (currently amended): Method as recited in claim 21 or 22, ~~characterized in that~~ wherein the production of the injection channel takes place at a high pressure and a low volume, and that the introduction of the medium to be injected takes place at a high volume and a low pressure.

Claim 24 (currently amended): Method as recited ~~at least~~ one of claims 21 to 23, ~~characterized in that~~ claim 21, wherein the pressure for producing the injection channel is applied by means of spring force, and that the pressure for injection of the medium to be injected is applied manually.